1906MNRAS..66..369.

truer view of Sinus Sabæus than that of May 16, the atmospheric definition being excellent in both cases and the probability of objective change on such a vast scale being out of question. But the evidently artificial character of such an assumption is avoided by the theory of contrast; considering fig. 1 to represent the best view of Sinus Sabæus, and the irregularly indented outline to look like the natural edge either of a vegetation tract or of water, or a combination of both, fig. 2 corresponds to the vagaries of an exhausted retina, since, according to contrast, fig. 1 will appear like fig. 2 after a very prolonged fixity of gaze.* I have, however, an open mind; and the day when Major Molesworth will have succeeded in demonstrating that the amelioration of telescopic seeing by eye-training involves the positive *loss* of planetary detail he will have established his contention on a strong basis.

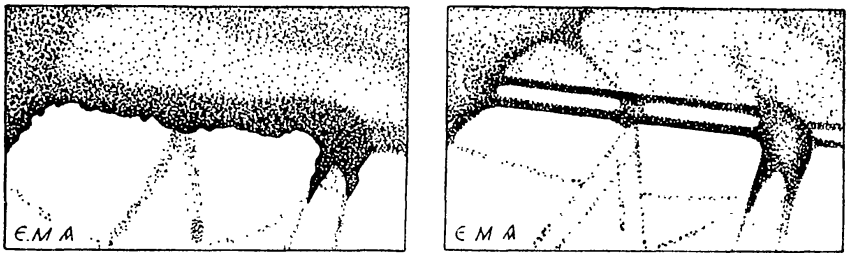

Fig. 1. May 16.

Fig. 2. June 20.

Appearances presented by Sinus Sabæus in 1890 according to Signor Schiaparelli.

Observations of Comet a 1904, *from Photographs taken with the* 30-*inch Reflector of the Thompson Equatorial and the* 13-*inch Astrographic Refractor at the Royal Observatory, Greenwich.*

(*Communicated by the Astronomer Royal.*)

The following positions of Comet *a* 1904 were obtained from photographs taken with the 30-inch reflector, except that on 1904 April 17, which was taken with the 13-inch astrographic refractor. From two to four exposures were made on each plate, the duration being 3^m in 1904 April and May, 2^m in June, afterwards increasing to 7^m in October. The last photograph, on 1905 May 8, has two exposures of 20^m each.

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* I attribute to a fatigue of the retina the disappearance of the faint half-tones of the N. hemisphere of *Mars* from the charts of Signor Schiaparelli and Mr. Lowell. The tired eye sees better the outlines than the central regions of faint duskinesses.

1906MNRAS..66..369.

The plates were measured in the astrographic micrometer. Four reference stars were taken in each case, situated as symmetrically as possible about the comet. The positions were derived from the Catalogues of the Astronomische Gesellschaft.

Date.	G.M.T.	Apparent R.A.	Apparent Dec.	Log Δ.	Corr. for Parallax. R.A.	Corr. for Parallax. Dec.
1904.	h m s	h m s	° ′ ″		s	″
Apr. 17	11 21 31	16 56 20·29	44 44 31·9	0·3490	−·20	+1·2
18	11 19 59	16 53 34·02	44 22 5·6	0·3490	−·20	+1·2
19	10 24 14	16 50 48·65	45 57 48·9	0·3490	−·22	+1·5
20	9 25 34	16 47 58·55	46 32 55·8	0·3490	−·24	+1·9
20	10 37 52	16 47 49·39	46 34 45·8	0·3490	−·21	+1·3
21	10 30 41	16 44 46·95	47 10 38·6	0·3490	−·22	+1·3
25	9 52 42	16 31 42·01	49 27 17·9	0·3502	−·23	+1·2
25	10 26 28	16 31 36·97	49 28 5·2	0·3502	−·21	+1·0
26	10 40 1	16 28 3·31	50 0 56·2	0·3510	−·20	+0·8
26	11 15 56	16 27 57·82	50 1 44·0	0·3510	−·17	+0·6
27	9 34 44	16 24 35·68	50 31 9·9	0·3518	−·24	+1·2
27	9 46 59	16 24 33·81	50 31 26·2	0·3518	−·23	+1·1
May 2	9 46 8	16 5 6·89	52 56 22·0	0·3556	−·22	+0·7
2	10 3 52	16 5 3·85	52 56 41·8	0·3556	−·21	+ ·6
3	10 50 9	16 0 47·21	53 23 33·1	0·3570	−·16	+ ·2
4	9 34 15	15 56 47·45	53 47 10·3	0·3585	−·22	+ ·6
5	10 23 15	15 52 21·25	54 11 52·5	0·3599	−·17	+ ·2
7	11 17 8	15 43 24·72	54 57 2·9	0·3628	−·10	− ·1
9	11 8 50	15 34 26·11	55 36 41·0	0·3658	−·09	− ·2
11	9 25 11	15 25 35·56	56 10 37·2	0·3692	−·18	+ ·2
14	10 58 18	15 11 19·15	56 55 35·9	0·3752	−·05	− ·3
16	9 59 3	15 2 8·63	57 18 37·2	0·3791	−·10	− ·3
18	9 37 40	14 52 52·04	57 37 28·4	0·3842	−·11	− ·3
18	9 57 1	14 52 48·23	57 37 35·5	0·3842	−·09	− ·3
19	9 45 22	14 48 11·82	57 45 22·7	0·3865	−·09	− ·3
25	9 31 20	14 21 10·53	58 10 41·9	0·4008	−·05	− ·4
25	9 59 37	14 21 5·37	58 10 43·7	0·4008	−·01	− ·4
30	10 13 19	14 0 11·57	58 6 37·2	0·4125	+·05	− ·4
30	10 27 44	14 0 9·18	58 6 35·2	0·4125	+·07	− ·3
31	9 57 40	13 56 18·02	58 3 30·8	0·4151	+·04	− ·4
June 3	10 4 39	13 44 59·99	57 49 59·9	0·4230	+·07	− ·3
5	10 19 21	13 37 53·69	57 37 55·7	0·4284	+·10	− ·2
10	11 42 59	13 21 41·57	56 58 46·4	0·4417	+·20	+ ·4
16	10 29 21	13 5 38·76	56 0 52·7	0·4577	+·16	+ ·2
18	10 32 53	13 0 56·59	55 39 25·3	0·4630	+·17	+ ·3

1906MNRAS..66..369.

Date.		G.M.T.			Apparent R.A.			Apparent Dec.			Log Δ.	Corr. for Parallax.	
												R.A.	Dec.
1904.		h	m	s	h	m	s	°	′	″		s	″
June	20	10	6	11	12	56	36·64	55	17	29·9	0·4683	+·16	+·3
	20	10	17	24	12	56	35·60	55	17	24·7	0·4683	+·17	+·3
	21	10	55	5	12	54	28·31	55	5	50·2	0·4709	+·19	+·6
	21	11	9	21	12	54	27·00	55	5	43·4	0·4709	+·19	+·7
	27	11	0	22	12	43	37·15	53	56	9·1	0·4862	+·19	+·8
	28	10	30	41	12	42	4·62	53	44	36·4	0·4887	+·18	+·7
	28	10	43	47	12	42	4·03	53	44	30·2	0·4887	+·18	+·8
	29	10	28	16	12	40	34·60	53	32	48·3	0·4912	+·18	+·7
	29	10	41	39	12	40	33·80	53	32	42·1	0·4912	+·18	+·8
July	1	10	28	2	12	37	44·72	53	9	10·1	0·4960	+·18	+·8
	5	10	28	20	12	32	46·40	52	21	59·5	0·5055	+·18	+·9
	6	10	14	45	12	31	40·66	52	10	23·6	0·5079	+·17	+·9
	8	10	25	53	12	29	35·57	51	47	1·3	0·5125	+·18	+1·0
	9	11	10	18	12	28	36·13	51	35	6·2	0·5147	+·18	+1·3
	11	10	27	25	12	26	50·54	51	12	30·7	0·5192	+·17	+1·1
	15	10	31	49	12	23	46·24	50	27	36·1	0·5279	+·17	+1·2
	18	10	20	35	12	21	52·58	49	54	57·2	0·5341	+·17	+1·2
	20	10	57	24	12	20	46·10	49	33	21·8	0·5380	+·16	+1·4
	20	11	13	24	12	20	45·76	49	33	15·0	0·5380	+·16	+1·5
	21	10	22	59	12	20	16·93	49	23	7·7	0·5399	+·16	+1·3
	21	10	36	37	12	20	16·56	49	23	1·5	0·5399	+·16	+1·4
	28	9	57	54	12	17	38·04	48	12	59·7	0·5530	+·15	+1·3
	28	10	13	11	12	17	37·85	48	12	54·7	0·5530	+·15	+1·3
Aug.	2	9	55	2	12	16	30·33	47	26	21·9	0·5614	+·15	+1·4
	4	10	22	49	12	16	12·37	47	8	23·2	0·5646	+·14	+1·6
	6	10	0	51	12	15	59·67	46	51	13·9	0·5677	+·14	+1·5
	8	9	55	32	12	15	51·69	46	34	29·4	0·5706	+·14	+1·5
	12	9	50	57	12	15	48·20	46	2	35·3	0·5761	+·14	+1·5
	17	9	45	53	12	16	3·06	45	25	44·1	0·5825	+·13	+1·6
	17	10	4	15	12	16	3·16	45	25	37·6	0·5825	+·13	+1·7
	18	10	39	1	12	16	8·84	45	18	29·9	0·5837	+·11	+1·8
	24	9	33	51	12	16	57·29	44	39	53·1	0·5902	+·12	+1·6
	24	9	42	42	12	16	57·43	44	39	51·5	0·5902	+·12	+1·7
	26	9	36	35	12	17	19·10	44	28	2·1	0·5921	+·12	+1·7
	29	9	0	48	12	17	55·21	44	11	25·5	0·5949	+·12	+1·6
Sept.	3	8	50	11	12	19	5·93	43	46	24·7	0·5988	+·12	+1·6
	7	8	44	20	12	20	10·49	43	28	58·7	0·6015	+·12	+1·6
	9	9	19	22	12	20	45·13	43	21	2·6	0·6027	+·11	+1·8
	17	8	40	32	12	23	13·97	42	55	56·0	0·6064	+·11	+1·7

1906MNRAS..66..369.

Date.	G.M.T.	Apparent R.A.	Apparent Dec.	Log Δ.	Corr. for Parallax. R.A.	Dec.
1904	h m s	h m s	° ′ ″		s	″
Sept. 19	7 45 44	12 23 52·66	42 51 14·2	0·6071	+·12	+1·5
20	7 42 26	12 24 12·69	42 49 4·6	0·6074	+·12	+1·5
Oct. 3	7 13 55	12 28 39·55	42 35 54·8	0·6090	+·11	+1·6
12	7 3 2	12 31 42·34	42 43 45·6	0·6076	+·11	+1·7
1905.						
Jan. 17	12 25 0	11 39 30·61	60 33 58·1	0·5471	−·17	+·1
25	11 48 7	11 16 58·30	62 19 41·0	0·5489	−·16	·0
Feb. 2	11 33 34	10 50 35·30	63 39 12·9	0·5536	−·14	−·3
25	11 37 46	9 28 25·59	64 15 16·9	0·5816	+·03	−·5
Apr. 12	10 21 6	8 3 36·90	56 41 20·8	0·6720	+·12	+·2
May 8	10 16 29	7 57 26·30	52 11 12·0	0·7223	+·11	+·7

Further details of the observations will be given in the volume of "Greenwich Observations."

Royal Observatory, Greenwich:
1906 *April* 10.

Note on the Effects of Difference of Sea and Air Temperatures on Marine Refraction. By the Rev. William Hall, R.N.

(*Communicated by the Secretaries.*)

Observers who use the sea-horizon are often confronted with a displacement of the visible horizon, which, while not amounting to *mirage*, is nevertheless capable of disturbing their "sights." It would appear that very little exists upon which to base a theory of such abnormal refraction, since none of the recognised text-books of nautical astronomy refer to it. I submit a few suggestions.

My attention was first drawn to the subject in 1897, when, in observing equal altitudes of the Sun for rating chronometers at Ras-el-Tin, Alexandria, I found a remarkable discrepancy in results, and was led to connect it with a *mirage* which occurred intermittently during the day. On the next days I took temperatures of air and of the sandy soil and obtained a series of about seven days' observations—about four sets per day—and tried graphic methods of getting some connection between the true and apparent altitudes. It seemed that a formula of the shape

$$R = a + bT^2$$

was indicated, T being difference of temperatures of air and sand.

My results were retained with a view to further experiment,